

RD29605-4

IN THE CLAIMS

1. (Currently Amended) A multilayer article comprising:

(i)-a coating layer comprising a block copolyestercarbonate comprising structural units derived from at least one 1,3-dihydroxybenzene and at least one an aromatic dicarboxylic acid,
(ii)

a second layer comprising a polymer comprising carbonate structural units, (iii)

an adhesive layer comprising an adhesive material and a resinous copolymer, wherein the adhesive material comprises a polyurethane, wherein the resinous copolymer comprises structural units derived from an alkenyl aromatic compound and a conjugated diene, and wherein the resinous copolymer is compatible with the adhesive material, and

(iv)-a substrate layer comprising at least one material selected from the group consisting of a thermoplastic resin, a cured thermoset resin, a metal, a ceramic, a glass, and a cellulosic material, and mixtures thereof, wherein the coating layer is in contiguous contact with the second layer, and the adhesive layer is in contiguous contact with the second layer and the substrate layer.

2. (Currently Amended) The article of claim 1 wherein the coating layer comprises at least one 1,3-dihydroxybenzene selected from the group consisting of unsubstituted resorcinol, 2-methyl resorcinol, and mixtures thereof.

3. (Original) The article of claim 2 wherein the 1,3-dihydroxybenzene is unsubstituted resorcinol.

4. (Original) The article of claim 1 wherein the aromatic dicarboxylic acid is selected from the group consisting of isophthalic acid, terephthalic acid, naphthalene-2,6-dicarboxylic acid, and mixtures thereof.

5. (Original) The article of claim 4 wherein the aromatic dicarboxylic acid is a mixture of isophthalic acid and terephthalic acid.

RD29605-4

6. (Original) The article of claim 5 wherein the ratio of isophthalic-derived structural units to terephthalic-derived structural units is about 0.25-4.0 : 1.

7. (Original) The article of claim 5 wherein the ratio of isophthalic-derived structural units to terephthalic-derived structural units is about 0.40-2.5 : 1.

8. (Original) The article of claim 1 wherein the copolyestercarbonate comprises about 10% to about 99% by weight arylate blocks.

9. (Original) The article of claim 1 wherein the copolyestercarbonate comprises about 60% to about 98% by weight arylate blocks.

10. (Original) The article of claim 1 wherein the carbonate portion of the copolyestercarbonate comprises structural units derived from bisphenol A.

11. (Original) The article of claim 1 wherein the second layer comprises a bisphenol A polycarbonate.

12. (Currently Amended) The article of claim 1 wherein the second layer further comprises at least one colorant selected from the group consisting of dyes, pigments, metal flakes, and glass flakes, and mixtures thereof.

13. (Currently Amended) The article of claim 1 wherein the adhesive layer comprises at least one polyurethane comprising structural units derived from at least one polyol selected from the group consisting of polyether polyols, polyester polyols, polytetramethylene ether glycol, hexamethylene glycol, and polyols based on polybutadiene, and mixtures thereof.

14. (Original) The article of claim 13 wherein the polyurethane comprises structural units derived from methylene diphenyl diisocyanate or methylene bis(cyclohexyl) diisocyanate.

15. (Original) The article of claim 1 wherein the polyurethane comprises an aliphatic polyurethane film.

RD29605-4

16. (Currently Amended) The article of claim 1 wherein the ~~adhesive-layer polyurethane~~ comprises a block copolymer comprising a thermoplastic polyurethane block and at least one block comprising structural units derived from styrene.

17. (Original) The article of claim 16 wherein the block comprising structural units derived from styrene comprises a hydrogenated styrene-diene block.

18. (Cancelled)

19. (Currently Amended) The article of claim-18 1 wherein the alkenyl aromatic compound ~~additional-resinous material-is-a copolymer-comprising-~~ comprises structural units derived from styrene.

20. (Cancelled)

21. (Currently Amended) The article of claim-20- 1 wherein the multilayer article exhibits a ninety-degree peel force of at least 1750 Newtons per meter.

RD29605-4

22. (Currently Amended) The article of claim 1 wherein the substrate layer comprises at least one thermoplastic resin selected from the group consisting of ~~condensation polymers, polycarbonates, aromatic polycarbonates, bisphenol-A polycarbonate, polyacetals, polyarylene ethers, polyphenylene ethers, polyarylene sulfides, polyphenylene sulfides, polyimides, polyamideimides, polyetherimides, polyetherketones, polyaryletherketones, polyetheretherketones, polyetherketoneketones, polyamides, copolyamides, polyesters, liquid crystalline polyesters, polyetheresters, polyetheranides, polyesteranides, polyestercarbonates, poly(alkylene dicarboxylates), poly(ethylene terephthalate), poly(1,4-butylene terephthalate), poly(trimethylene terephthalate), poly(ethylene naphthalate), poly(butylene naphthalate), poly(cyclohexanedimethanol terephthalate), poly(cyclohexanedimethanol-co-ethylene terephthalate), poly(1,4-cyclohexanedimethyl-1,4-cyclohexanedicarboxylate), polyarylates, a polyarylate comprising structural units derived from bisphenol-A, terephthalic acid, and isophthalic acid; addition polymers, homo- and copolymeric aliphatic olefin and functionalized olefin polymers, polyethylene, polypropylene, thermoplastic polyolefin, ethylene-propylene copolymer, poly(vinyl chloride), poly(vinyl chloride-co-vinylidene chloride), poly(vinyl fluoride), poly(vinylidene fluoride), poly(vinyl acetate), poly(vinyl alcohol), poly(vinyl butyral), poly(acrylonitrile), acrylic polymers, poly(meth)acrylamides, polyalkyl (meth)acrylates, poly(methyl methacrylate) polymers of alkylaromatic compounds, polystyrenes, syndiotactic polystyrene, acrylonitrile-butadiene-styrene (ABS), and acrylonitrile-styrene-acrylate (ASA) copolymers; and blends thereof.~~

23 - 26. (Cancelled)

27. (Currently Amended) The article of claim 1 wherein ~~thicknesses of layers are:~~ the coating layer has a thickness of about 2-2,500 microns; the second layer has a thickness of about 2-2,500 microns; and the adhesive layer has a thickness of about 8-2,500 microns.

28. (Cancelled)

RD29605-4

29. (Currently Amended) A multilayer article comprising;

(i) a coating layer comprising a block copolyester carbonate comprising structural units derived from unsubstituted resorcinol, a mixture of isophthalic acid and terephthalic acid, and bisphenol A; (ii)

a second layer comprising a bisphenol A polycarbonate optionally containing at least one colorant, (iii)

an adhesive layer comprising a resinous copolymer and comprising an adhesive material selected from the group consisting of a polyurethane; an aliphatic polyurethane film; thermoplastic polyurethane; and a block copolymer comprising a thermoplastic polyurethane block and at least one block comprising structural units derived from styrene; and a blend of (a) a block copolymer comprising a thermoplastic polyurethane block and at least one block comprising structural units derived from styrene; and (b) a resinous copolymer comprising structural units derived from styrene; and (iv), wherein the resinous copolymer comprises structural units derived from an alkenyl aromatic compound and a conjugated diene, wherein the resinous copolymer is compatible with the adhesive material, and

a substrate layer selected from the group consisting of a thermoplastic resin, a cured thermoset resin, a metal, a ceramic, a glass, and a cellulosic material;

wherein the coating layer is in contiguous contact with the second layer, and the adhesive layer is in contiguous contact with the second layer and the substrate layer; and wherein the multilayer article exhibits a ninety-degree peel force of at least 700 Newtons per meter.

RD29605-4

30. (Currently Amended) A film assembly comprising:

(i) a coating layer comprising a block copolyestercarbonate comprising structural units derived from at least one 1,3-dihydroxybenzene and at least one an aromatic dicarboxylic acid,
(ii)

a second layer comprising a polymer comprising carbonate structural units, and (iii)

an adhesive layer comprising an adhesive material and a resinous copolymer, wherein the adhesive material comprises a polyurethane, wherein the resinous copolymer comprises structural units derived from an alkenyl aromatic compound and a conjugated diene, and wherein the resinous copolymer is compatible with the adhesive material.

31. (Currently Amended) A film assembly comprising: (i)

a coating layer comprising a block copolyestercarbonate comprising structural units derived from unsubstituted resorcinol, a mixture of isophthalic acid and terephthalic acid, and bisphenol A; (ii)

a second layer comprising a bisphenol A polycarbonate optionally containing at least one colorant, and (iii)

an adhesive layer comprising a resinous copolymer and comprising an adhesive material selected from the group consisting of a polyurethane; an aliphatic polyurethane film; thermoplastic polyurethane; and a block copolymer comprising a thermoplastic polyurethane block and at least one block comprising structural units derived from styrene; and a blend of (a) a block copolymer comprising a thermoplastic polyurethane block and at least one block comprising structural units derived from styrene, and (b) a resinous copolymer comprising structural units derived from styrene,

wherein the resinous copolymer comprises structural units derived from an alkenyl aromatic compound and a conjugated diene, wherein the resinous copolymer is compatible with the adhesive material.

RD29605-4

32. (Currently Amended) A method for making a multilayer article comprising (i)-a coating layer comprising a block copolyestercarbonate comprising structural units derived from at least one 1,3-dihydroxybenzene and at least one aromatic dicarboxylic acid, (ii)-a second layer comprising a polymer comprising carbonate structural units, (iii)-an adhesive layer comprising an adhesive material and a resinous copolymer, wherein the adhesive material comprises a polyurethane, wherein the resinous copolymer comprises structural units derived from an alkenyl aromatic compound and a conjugated diene, and wherein the resinous copolymer is compatible with the adhesive material, and (iv)-a substrate layer comprising at least one material selected from the group consisting of a thermoplastic resin, a cured thermoset resin, a metal, a ceramic, a glass, and a cellulosic material, wherein the coating layer is in contiguous contact with the second layer, and the adhesive layer is in contiguous contact with the second layer and the substrate layer;

which method is selected from the group consisting of

the method (i) comprising the steps of (a)-preparing an assembly of the coating layer and the second layer, and (b)-combining said the assembly with the separate adhesive layer and the substrate layer;

the method (ii) comprising the steps of (a)-preparing an assembly of the coating layer and the second layer, (b)-forming the adhesive layer adjacent to the substrate layer, and (c) combining said the assembly with the adhesive layer / substrate layer combination; and

the method (iii) comprising the steps of (a)-preparing an assembly of the coating layer, the second layer, and the adhesive layer, and (b)-forming said the assembly adjacent to the substrate layer.

33. (Currently Amended) The method of claim 32 wherein the assembly of the coating layer and the second layer is formed by coextrusion.

34. (Currently Amended) The method of claim 32 wherein forming said the assembly adjacent to the adhesive layer is performed by extrusion coating, lamination, or compression molding.

RD29605-4

35. (Currently Amended) The method of claim 32 wherein the coating layer comprises at least one 1,3-dihydroxybenzene selected from the group consisting of unsubstituted resorcinol, 2-methyl resorcinol, and mixtures thereof.
36. (Original) The method of claim 35 wherein the 1,3-dihydroxybenzene is unsubstituted resorcinol.
37. (Original) The method of claim 32 wherein the aromatic dicarboxylic acid is selected from the group consisting of isophthalic acid, terephthalic acid, naphthalene-2,6-dicarboxylic acid, and mixtures thereof.
38. (Original) The method of claim 37 wherein the aromatic dicarboxylic acid is a mixture of isophthalic acid and terephthalic acid.
39. (Original) The method of claim 38 wherein the ratio of isophthalic-derived structural units to terephthalic-derived structural units is about 0.25-4.0 : 1.
40. (Original) The method of claim 39 wherein the ratio of isophthalic-derived structural units to terephthalic-derived structural units is about 0.40-2.5 : 1.
41. (Original) The method of claim 32 wherein the copolyestercarbonate comprises about 10% to about 99% by weight arylate blocks.
42. (Original) The method of claim 32 wherein the copolyestercarbonate comprises about 60% to about 98% by weight arylate blocks.
43. (Original) The method of claim 32 wherein the carbonate portion of the copolyestercarbonate comprises structural units derived from bisphenol A.
44. (Original) The method of claim 32 wherein the second layer comprises a bisphenol A polycarbonate.
45. (Currently Amended) The method of claim 32 wherein the second layer further comprises at least one colorant selected from the group consisting of dyes, pigments, metal flakes, and glass flakes.

RD29605-4

46. (Currently Amended) The method of claim 32 wherein the adhesive layer comprises ~~at least one~~ polyurethane comprising structural units derived from ~~at least one~~ polyol selected from the group consisting of polyether polyols, polyester polyols, polytetramethylene ether glycol, hexamethylene glycol, and polyols based on polybutadiene.

47. (Original) The method of claim 46 wherein the polyurethane comprises structural units derived from methylene diphenyl diisocyanate or methylene bis(cyclohexyl) diisocyanate.

48. (Original) The method of claim 32 wherein the polyurethane comprises an aliphatic polyurethane film.

49. (Currently Amended) The method of claim 32 wherein the adhesive layer comprises a block copolymer comprising a thermoplastic polyurethane block and ~~at least one~~ block comprising structural units derived from styrene, and a block comprising the polyurethane, wherein the polyurethane is thermoplastic polyurethane.

50. (Original) The method of claim 49 wherein the block comprising structural units derived from styrene comprises a hydrogenated styrene-diene block.

51. (Cancelled)

52. (Currently Amended) The method of claim ~~51~~ 49 wherein the alkenyl aromatic compound comprises additional resinous material is a copolymer comprising structural units derived from styrene.

53. (Cancelled)

54. (Currently Amended) The method of claim 53 wherein the ~~multilayer article~~ exhibits a ninety-degree peel force of at least 1750 Newtons per meter.

RD29605-4

55. (Currently Amended) The method of claim 32 wherein the substrate layer comprises at least one thermoplastic resin selected from the group consisting of condensation polymers, polycarbonates, aromatic polycarbonates, bisphenol-A polycarbonate, polyacetals, polyarylene ethers, polyphenylene ethers, polyarylene sulfides, polyphenylene sulfides, polyimides, polyamideimides, polyetherimides, polyetherketones, polyaryletherketones, polyetheretherketones, polyetherketoneketones, polyamides, copolyamides, polyesters, liquid crystalline polyesters, polyetheresters, polyetheramides, polyesteramides, polyestercarbonates, poly(alkylene dicarboxylates), poly(ethylene terephthalate), poly(1,4-butylene terephthalate), poly(trimethylene terephthalate), poly(ethylene naphthalate), poly(butylene naphthalate), poly(cyclohexanedimethanol terephthalate), poly(cyclohexanedimethanol-co-ethylene terephthalate), poly(1,4-cyclohexanedimethyl-1,4-cyclohexanedicarboxylate), polyarylates, a polyarylate comprising structural units derived from bisphenol-A, terephthalic acid, and isophthalic acid; addition polymers, homo- and copolymeric aliphatic olefin and functionalized olefin polymers, polyethylene, polypropylene, thermoplastic polyolefin, ethylene-propylene copolymer, poly(vinyl chloride), poly(vinyl chloride-co-vinylidene chloride), poly(vinyl fluoride), poly(vinylidene fluoride), poly(vinyl acetate), poly(vinyl alcohol), poly(vinyl butyral), poly(acrylonitrile), acrylic polymers, poly(meth)acrylamides, polyalkyl-(meth)acrylates, poly(methyl-methacrylate) polymers of alkenylaromatic compounds, polystyrenes, syndiotactic polystyrene, acrylonitrile-butadiene-styrene (ABS), and acrylonitrile-styrene-acrylate (ASA) copolymers; and blends thereof.

56 - 59. (Cancelled)

60. (Currently Amended) The method of claim 32 wherein thicknesses of layers are: a the coating layer has a thickness of about 2-2,500 microns; the a-second layer has a thickness of about 2-2,500 microns; and an the adhesive layer has a thickness of about 8-2,500 microns.

61. (Cancelled)

62. (New) The article of claim 22 wherein the thermoplastic resin is selected from the group consisting of polyethylene, polypropylene, thermoplastic polyolefin, ethylene-propylene copolymer, and blends thereof.

RD29605-4

63. (New) The article of claim 22 wherein the thermoplastic resin comprises thermoplastic polyolefin.

64. (New) The method of claim 32,
wherein the block copolyester carbonate further comprises structural units derived from bisphenol A,

wherein the 1,3-dihydroxybenzene comprises unsubstituted resorcinol,

wherein the aromatic dicarboxylic acid comprises a mixture of isophthalic acid and terephthalic acid,

wherein the polymer is a bisphenol A polycarbonate,

wherein the adhesive material is selected from the group consisting of an aliphatic polyurethane film; a thermoplastic polyurethane; and a block copolymer comprising a thermoplastic polyurethane block and at least one block comprising structural units derived from styrene, and

wherein the resinous copolymer comprises structural units derived from an alkenyl aromatic compound and a conjugated diene, and wherein the resinous copolymer is compatible with the adhesive material.

65. (New) The method of claim 55 wherein the thermoplastic resin is selected from the group consisting of polyethylene, polypropylene, thermoplastic polyolefin, ethylene-propylene copolymer, and blends thereof.

66. (New) The article of claim 55 wherein the thermoplastic resin comprises thermoplastic polyolefin.

RD29605-4

67. (New) A multilayer article comprising:

a coating layer comprising a block copolyestercarbonate comprising structural units derived from a 1,3-dihydroxybenzene and an aromatic dicarboxylic acid,

an adhesive layer comprising an adhesive material and a resinous copolymer, wherein the adhesive material comprises a polyurethane, wherein the resinous copolymer comprises structural units derived from an alkenyl aromatic compound and a conjugated diene, and wherein the resinous copolymer is compatible with the adhesive material, and

a substrate layer comprising a substrate material selected from the group consisting of homo- and copolymeric aliphatic olefin and functionalized olefin polymers,

wherein the adhesive layer is disposed between the coating layer and the substrate.

68. (New) The article of claim 67 wherein the substrate material is selected from the group consisting of polyethylene, polypropylene, thermoplastic polyolefin, ethylene-propylene copolymer, and blends thereof.

69. (New) The article of claim 67 wherein the substrate material comprises thermoplastic polyolefin.

70. (New) The article of claim 67 wherein the resinous copolymer comprises an elastomeric polystyrene-b-poly(isoprene)-b-polystyrene block copolymer.

71. (New) The article of claim 70 wherein the elastomeric polystyrene-b-poly(isoprene)-b-polystyrene block copolymer is a block copolymer comprising polystyrene end blocks and a vinyl-bonded, polyisoprene-rich middle block.

72. (New) The article of claim 70 wherein the elastomeric polystyrene-b-poly(isoprene)-b-polystyrene block copolymer is hydrogenated.

RD29605-4

73. (New) A multilayer article comprising:

a coating layer comprising a block copolyestercarbonate comprising structural units derived from a 1,3-dihydroxybenzene and an aromatic dicarboxylic acid,

an adhesive layer comprising a block copolymer comprising a polyurethane block comprising a structural unit derived from a polyurethane and a styrene block comprising a structural unit derived from styrene, and

a substrate layer comprising a material selected from the group consisting of a thermoplastic resin, a cured thermoset resin, a metal, a ceramic, a glass, a cellulosic material, and mixtures thereof,

wherein the adhesive layer is disposed between the coating layer and the substrate.

74. (New) The article of claim 73 wherein the substrate material is selected from the group consisting of polyethylen, polypropylene, thermoplastic polyolefin, ethylene-propylene copolymer, polystyrene, polyarylene ether, polyphenylene ether, and blends thereof.

75. (New) The article of claim 73 wherein the substrate material comprises thermoplastic polyolefin.